

### Patent Claims

1. Method for monitoring a braking torque modification of a retarder (1), in particular of a motor vehicle, said braking torque modification being controlled by an actuating pressure control circuit comprising a pressure sensor that is connected in said circuit. The method comprises the following steps:
  - 1.1 the actuating pressure of the retarder is dynamically detected by means of the pressure sensor that is mounted in the actuating pressure control circuit;
  - 1.2 the temporal progression of the detected actuating pressure is compared with at least one predetermined target progression;
  - 1.3 a warning is issued and/or a future activation of the retarder by a user, in particular the driver of the vehicle, is prevented, based on the actual-target comparison and if predetermined criteria have been fulfilled.
2. Method in accordance with Claim 1, characterized by the fact that the predetermined target progression is stored in the form of at least one target characteristic, in particular in a retarder control unit.
3. Method in accordance with one of Claims 1 or 2, characterized by the fact that the comparison is performed by the retarder control unit.
4. Method in accordance with one of Claims 2 or 3, characterized by the fact that the predetermined target progression comprises two target characteristics, an advance warning characteristic and an immobilization characteristic, whereby the temporal progression of the detected actuating pressure is compared with both characteristics or is first compared with the warning characteristic and in the case of a braking torque decrease predetermined by the actuating pressure control circuit upon the exceeding of the warning characteristic and in the case of a braking torque increase predetermined by the actuating pressure control circuit upon the falling below of the warning characteristic is then compared with the immobilization characteristic, and

upon the exceeding of the warning characteristic of the predetermined braking torque decrease and up the falling below of the warning characteristic in the case of the predetermined braking torque increase a warning is issued; and  
upon the exceeding of the immobilization characteristic in the case of the predetermined braking torque decrease and upon the falling below of the immobilization characteristic in the case of the predetermined braking torque increase a future activation of the retarder (1) by a user, in particular the driver of the vehicle, is prevented.

5. Method in accordance with one of Claims 2 through 4, characterized by the fact that the target characteristic, of which there is at least one, is stored based on specific design data of the individual motor vehicle system and variable, detected state data of the motor vehicle system and/or the environment.

6. Method in accordance with one of Claims 2 through 5, characterized by the fact that the target characteristic, of which there is at least one, is stored as an adaptive characteristic based on the operating data detected at the beginning of the vehicle operating time.

7. Method in accordance with one of Claims 2 through 6, characterized by the fact that the comparison comprises the comparing of the times between two predetermined actuating pressure points of the detected temporal progression of the actuating pressure and of the predetermined target characteristic, of which there is at least one.

8. Method in accordance with one of Claims 2 through 7, characterized by the fact that the comparison comprises the comparing of the actuating pressure gradients at predetermined actuating pressure points of the detected temporal progression and of the predetermined target characteristic, of which there is at least one.

9. Method in accordance with one of Claims 2 through 8, characterized by the fact that at least a first target characteristic of the minimum actuating pressure and a second target characteristic of the maximum actuating pressure are stored.

10. Method in accordance with Claim 9, characterized by the fact that a braking torque increase of a retarder is monitored, and the first target characteristic is created based on a minimum possible pressure in an air brake reservoir for working fluid of the retarder (1), and the second target characteristic is created based on a maximum possible pressure in the air brake reservoir.

11. Method in accordance with one of Claims 1 through 9, characterized by the fact that a deactivation process of the retarder (1) is monitored.

12. Method in accordance with one of Claims 1 through 9, characterized by the fact that a braking torque reduction of the retarder is monitored at a predetermined braking torque.

13. Use of a pressure sensor (2) installed in an actuating pressure control circuit of a retarder (1) for the dynamic monitoring of the actuating pressure and for error detection.